4th International Conference on
Public Policy (ICPP4)
June 26-28, 2019 – Montréal

Panel T14-P19 Session 2

Beyond Typologies: Innovation in the Study of Environmental Policy Instruments

River Basin Governance in China: Policy Evolution and Implementation

Author(s)

Fang Xu

University of Auckland

E-Mail:fxu332@aucklanduni.ac.nz

Date of presentation

June 28, 2019

Abstract

Water pollution prevention and control have become one of the priorities in China's environmental policy agenda. Addressing critical questions concerning water policy instruments and implementation styles can help meet the challenges of environmental governance in transition. Policy instruments have varying effects, so governments make choices depending on different political, social, and economic contexts. How are different water policy instruments used in specific implementation contexts? In order to address this question, the paper first analyses the evolution of water policy instruments, focusing on the shift in key policy instrument combinations within China. The focus here is on a range of recent water policy instruments in the Huai River Basin spanning from 1994 to 2018. The Huai River Basin is the first river basin to adopt an overall national policy on water pollution control. The article goes on to explore how changes in water policy mix in the Huai River Basin have influenced implementation modes. The analysis suggests that legitimacy is one critical consideration of instrument preferences in most contexts. Current empirical evidence to understand the environmental policy evolution and implementation style dynamics in China is relatively scant. The comparative findings in China may be used to develop the model of basic environmental instrument preferences in authoritarian regimes.

Keywords: Water policy; China; policy instruments; policy implementation

1. Introduction

China is regarded as centralized and efficient in realizing political and economic goals (Fukuyama, 2011; L. Tang, 2017). Its central government controls over local governments in different ways, an important example of which is the Five-Year Plan (FYP): every five years, the central government drafts a new development plan, providing social and economic development goals that local governments are expected to achieve. It was not until the 11th FYP (2006-2011) that environmental conservation was first written into the national social and economic development plans. Funds were allocated and measures were taken. In the first year, the central government leaders, aware of the continued environmental degradation, criticized the lax implementation of environmental policies by local governments. So, at the end of 2007, the central government decided to raise the environmental protection awareness of local officials, warning that local government leaders would be immediately discharged if they failed to meet the pollution reduction target or saw severe pollution accidents happen in their tenure.

China's environmental governance widely relies on a command and control system. It is important to understand how these policy instruments interacted with China's environmental implementation. Building on rich archive and empirical data in the Huai River Basin, one of China's largest and most highly polluted river basins, this article draws a complex picture of China's environmental policy mix and implementation modes at different stages. Archives analysis starts from 1994 to 2018. Analyzed archives mainly focused on policy instruments, including national and local annual evaluation reports, the Internet and news reports. A cross-border visit across four provinces to observe local river governance was carried out in 2017 and 2018.[1] This article focuses on the evolution of policy instrument choice and the interplay between conflicts, policy ambiguity incentives and various implementation modes. The findings deepen our understanding of how Chinese governments are attempting to adjust to perceived environmental and political threats to the regime, and how the legitimacy-based political instruments achieve effective implementation to some degree.

2. Theoretical Framework

2.1 Policy Process and Instrument

Identifying and simplifying different stages of the public policy-making process, also known as "policy cycle", has a pivotal role in policy sciences. Although different models have been built in the hands of various scholars, they share a common logic and contribute to the growth of policy analysis. Today, the conventional taxonomy of policy cycle is a five-stage cycle: agenda-setting, policy formulation, decision-making, policy implementation and evaluation (Jann & Wegrich, 2007).

After the agenda-setting stage, policy-makers are expected to generate options on what and how to do about a public problem. While formulating a policy to protect water resources, for example, policy-makers should consider whether to increase water prices, build more sewage treatment plants, strictly control key polluting industries, encourage water-efficient irrigation and green production, introduce water rights and pollution permit trading system, or combine these policy tools, known as policy instruments. These are the actual actions or plans which governments are willing to implement (Cai, 2008; Chang, Ma, & Wang, 2013; Jiatao, 2010; Nickum, 2010; J. Wang, 2012). The variety of policy instruments enable government to deal with complex socioeconomic, political, institutional, and contextual factors that affect policy outcomes (Agrawal, 2012, p.328). Over the past decades, one of the most powerful and practicable tools is developed by Christopher Hood (1986), which consists of four types of instruments known as nodality (information-based instruments), authority-based, treasure-based and organization-based policy instruments (p.124).

Lasswell (1958, p.204) suggests that governments have developed a number of strategies to influence policy outcomes. During the first-generation, political scientists (Dahl & Lindblom, 1953; French, Raven, & Cartwright, 1959) preferred to develop their theories inductively from the empirical evidence of governance processes. Then Lowi (1972) created a four-cell matrix based on the specificity of the target of coercion and the likelihood of its actual application (Howlett et al., 2009, p.115). However, it has been rarely used because it is hard to operate. The second-generation scholars have attempted to mix the policy context and the nature of instruments, simplifying the relations between public administration and instruments analysis.

2.2 Policy Implementation

After categorizing these instruments, the question comes to 'why are particular combinations or mixes of policy instruments used in a specific region or government?' The studies on policy mix to meet environmental goals recognized both the importance of instrument choice as well as the policy implementation process.

The first-generation implementation theory emphasizes the importance of using models to analyze the policy outcomes. The second-generation starts to build a scientific theoretical framework and use hypothesis testing. The most famous debate is between top-down and bottom-up perspectives. Both sides have been challenged, as top-downers overemphasize the significance of policy makers and their commands, meanwhile the bottom-uppers overestimate the power of "street-level bureaucrats" in the policy implementation process. The arguments between these two approaches accelerated the development of the third-generation theory that combines both perspectives. The third generation integrates perspectives from top-down and bottom-up, suggesting conformity of policy process and cross-organizational implementation structures in a relational network. It is argued that neither top-down nor bottom-top model is feasible for explaining complex relationships between central and local agencies, considering that the former model is directly related to clear policies while the later model has been adapted to those uncertainty and ambiguous policies (Matland, 1995). Therefore, he proposes an "ambiguity-conflict model", differentiating the levels of ambiguity and conflict regarding policy goals, means, interest groups or policy process to identify four types of implementation processes. Policy conflict reflects the level of disagreement between the decision-making and the policy implementation preferred by different agencies. Thus, the level of policy conflict varies across agencies and policies.

Administrative implementation is the outcome of rational decision-making when both ambiguity and conflict are low, which means the desired implementation outcome is achieved so long as sufficient resources are given. Political implementation is chosen when ambiguity is low, but the conflict is high. Policy actors pursue clear but incompatible policy goals. In this case, the success implementation hinges on the power, that is, whether agents of change have great power and influence to force other actors to participate or not. The third implementation process, experimental implementation, is expected to be existed when governments face a high level of ambiguity and low level of conflict. As policy goals and tools are unclear or unknown,

then the decision on which solution or policy instrument to use in a given context would indicate an abroad variation. Lastly, symbolic implementation corresponds to a both high level of ambiguity and conflict context, where governments produce vague tools or policies to diminish conflicts considering the interest conflicts are likely to coexist with policy process.

In the context of continuing pressure on governments or implementers, local level coalitional strength leads to bargain, competition or coordination at the micro-level. This model also suggests that the process of implementation is in transitions, for example, from high to low level ambiguity, understanding implementation process dynamics on specific policy target emphasizes the complex context-based nature of governance modes and instrument choices. There is an increasing interest in studying environmental policies and implementation in China, the largest authoritarian county, however, how can this model explain environmental policy evolution in authoritarian system? To date, researchers have made efforts to identify what implementation is, how and why gaps happen; nevertheless, there is a need to explore more complex and integrated ways.

3. Environmental Policies and Incentive System in China

Researchers have shown an increased interest in comparative environmental politics studies in China since the 1990s. Some scholars argued that the choice of policy instruments is shaped by concerned agencies and the interactions between these stakeholders (Linder & Peters, 1989). In Chinese context, many actors and activities, such as the information transfer system, collusion behavior between local governments, inspectors and enterprises, can affect environmental outcomes (Kostka, 2013). It is difficult to clarify the interests of local officials as they related to the goals of the central government and multiple nodes of authority at local levels in contemporary China. A large and growing body of literature on the Chinese bureaucracy has investigated the role of incentive systems. More recently, scholars have argued that the national incentive system for the career advancement of local governments officials have fostered effective governance and contributed to economic growth and large-scale institutional change (Landry, 2008; Liang & Langbein, 2015).

The policy tools have been developed and adopted to meet environmental goals in China over decades, range from regulative, economic, political and administrative instruments (Liao, 2016; Schreifels, Fu, & Wilson, 2012). The Chinese government has often initiated policy change as a reaction to a specific environmental problem. This means to design and implement policy is highly dependent on context, considering that it is difficult for a country of China's scale to easily develop mechanisms to manage environmental risks. In addition, China's unique political system of governing in transitions leads to a novel environment for a better understanding of policy process and tool mix evolution. The environmental protection sector in China shares many features with other branches of the government in terms of structures and policy process. To some extent, classic models developed by political scientists to understand the Chinese state, such as the "fragmented authoritarianism" and "decentralized authoritarianism", can be applied to explain how decisions are made and policies implemented to solve environmental problems (Lieberthal, 1992; Qian & Mok, 2016). It is argued that the environmental sector is not exempt from the constraints salient in the Chinese governing system, such as administrative deadlocks caused by the tiao-kuai structure and the lack of capacity at local levels, limited public participation and poor performance in law enforcement (Rui, 2008).

Policies made by the central government - its goals or intentions - can be diluted, distorted, side-tracked, or displaced in the process of implementation. To a great extent, deviation in the implementation process is an unavoidable cost of scale. Thus, there are different enforcement mechanisms involved in policy process, for example, selective policy implementation, flexible implementation and campaign-style implementation. This paper expands upon Matland's ambiguity-conflict model to explain water policy evolution and implementation process in China, in terms of major policy instruments. What are the policy tools that Chinese government choose and how are they formulated, implemented, and changed? Taken together, these studies support the notion that studying the evolution of environmental policy tools and implementation process contribute to a deeper understanding of policy process in a non-Western context.

4. The Evolution of Water Policy Mixes in the Huai River Basin

This study evaluates the case of water governance in the Huai River Basin, which is considered a unique region in China with a high population density and have had severe water pollutions.

Since 1970s, various departments of the Chinese bureaucracy have dealt with the environmental degradation. As an example, river pollution aroused the attention of Chinese governments, which was caused by intensive industrial growth. The water conservancy work was covered in the First FYP from 1953 to 1957, included the work of permanent control of the major rivers which have caused severe disasters (Kirby, 1955). However, most efforts had been made to carry on flood-preventing work and build farm irrigation projects. It was until late 1980s, river pollution became one of the national concerns as several large-area river pollution accidents happened in the Huai River Basin (Fu et al., 2007). At the early stage, Chinese governments adopted a water quality test system, investigated the causes of water pollution accidents and started special projects to address serious pollution. In 1988, the first Water Law was introduced by the central government (Shen, 2004). The Environmental Committee of the State Council approved the establishment of "Water Resources Protection Leading Group in the Huai River Basin".[2] Despite increased attempts to control water pollutants, early implementation experiences show a limited effect on reducing pollution because of insufficient economic and technology support. Analyzing the evolution of water policy will contribute to a deeper understanding of the way China has dealt with environmental problems and challenges and successes and failures and dilemmas it faces. The subsequent sections introduce three evolution stages of water policy mix in the Huai River Basin.

4.1 Work to Overcome Obstacles (1994-2000)

The Environmental Protection Committee of the State Council organized the first comprehensive check on environmental protection implementation in Huai River Basin, which could signal the start of serious involvement by the central government in 1994. At the end of 9th FYP (in the 2000), water quality deterioration had been brought under 'preliminary control' through adopting a series of environmental policy tools.[3] During this period, Chinese governments had worked to overcome obstacles and achieved progress in water protection.

In 1994, key principles for Huai River protection were proposed, which include 'improving the overall water quality', 'strict control of new pollution sources' and 'setting deadlines for eliminating pollution'. The Huai River Basin was the defined as a part of national project called 'three rivers and three lakes' which was intended to prevent and control pollution in key river valleys and regions (J. Tang et al., 2015). China's State Council initiated the first water policy focusing on specific river basin in 1995, The Provisional Regulation for Water Pollution Prevention and Control in the Huai River Basin (The Provisional Regulation), designating basins as the relevant unit for managing and protecting water resources.[4] Following the promulgation of the Prevention and Control Plan of Water Pollution in the Huai River Basin and 9th FYP, China began systematically to establish her environmental regulatory system regarding river basin protection.[5] A mix of top-down command-and-control measures were employed to reduce emission of water pollutants.

One of the important policy tools is closing small polluting plants. This command-and-control instrument sought to crack down on chemical dumping as many of the biggest polluters are paper mill, chemical plant, leather industry, and chemical fertilizer plant. With the amendment of the 1996 Water Pollution Prevention and Control Law (Article 23), it is prohibited to build or expand high-pollution facilities.[6] Based on the national regulatory framework, the provincial authorities in the Huai River Basin introduced a series of local regulations, such as Regulations of Henan Province on Prevention and Control of Water Pollution, Regulations of Anhui Province on Prevention and Control of Water Pollution in the Huai River Basin, Regulations of Shandong Province on Prevention and Control of Water Pollution, and The Provisional Regulation for Total Emission Control of Regulated Pollutants in Jiangsu Province. [7]

During this period, central government implemented 'the Zero Point Action' in 1997, forcing all pollutant-discharging entities (daily emissions of waste water is more than 100t) to complete the task of treatment within a prescribed time limit (Liu, Lo, Zhan, & Wang, 2015). These plants would be closed down if they were not able before midnight on January 1,1998, and excessive discharge was forbidden in the Huai River Basin since that day. As the results, 1149 factories achieved the goal and survived while other 423 were forced to close down because they failed to meet the national standard. It turned out that banning polluting factories

work well in China. There were 4987 chemical companies had been closed and 272 factories were suspended operation, merged with others or shifted to different line of production by 2000. The COD emissions declined by 22.2% and 36.9%, by the end of 1998 and 2000, respectively which indicated that the water quality of the Huai River Basin overall improves gradually. [8]

4.2. Pollution Rebound (2001-2005)

China's emergency measures came on top of an even sweeping set of prohibitions seems to be working on the initial stage. However, a resurgence of water pollution in the Huai River Basin outbroke during 10th FYP because of lax implementation. In July 2004, dead streams and highly polluted water bodies caused by flood damage and industrial waste discharges, which were 150 km long, gained national attention again. [9]

Three main water policies tools were launched during this period. The Water Law (2002 Amendment) provides a critical legal framework for water management, adopting a system that organizes the administration by watersheds as well as by administrative areas (Article 12). [10] This law crystallizes the responsibilities of river basin commissions and relevant departments and regulates the discharge of water pollutants. The 2002 Water Law attempted to establish a strict licensing legal system which indicates that all water resources were declared to be the property of the state. Local enterprises and sectors need to obtain a usage license from local authorities when they use water reduces. At the same time, the Water Conservancy Commissions which established under the Ministry of Water Resources in China's major river basins were given comprehensive water use planning responsibilities which were intended to guide local water use licensing. Subsequent regulations had been established based on water rights trading and transfer system between localities.

The 10th FYP for Water Pollution Prevention and Control in the Huai River Basin listed among its goals the reduction of major pollutants. It planned to complete 161 urban sewage treatment systems by the end of 2005. As a result, only 66 of them had been put into operation. Neither COD emission nor NH emission achieved their goals, exceeding the standard by 1.56 times and 2.97 times, respectively. The 10th FYP discussed a link between a local leader's preference evaluation and environmental goal achievement, which means four provincial

leaders in the Huai River Basin were expected to be accountable to their water quality and emission levels. However, only 20% water bodies reached the national standard. [11]

4.3 Integrated Governance (2006-2018)

The government used various tools to reduce water pollutants, range from regulative instruments, market-based and a broad range of political and administrative tools during the new stage. The command-and-control tools include emission standards and limits; the marked-based subsidies or ecological compensation system; the administrative strategies such as environmental responsibility system and performance evaluation.

Although the COD goal of the 10th PYP was not met, central government again set a goal to reduce COD emission by 15.2% by the end of 2010, albeit from the higher 2005 emission level. The experience of the 10th FYP provided many lessons that influences the choice of policy tools and local implementation. According Ministry of Environmental Protection's report, the total emission of COD and NH decreased by 18.6% and 21.6%, which met the environmental targets. However, as the overall basin water resources regulator and planner, Huai River Commission (HRC) stated that the total amount of sewage dumped into rivers exceeding the limits.[12] The water quality has large variation and overall improves slightly during the 11th and 12th FYPs. According to the report, only 35.8% of water bodies achieve the national standard in 2010, 40% of rivers are GradeV and inferior GradeV level. In 2016, 42.1% of river sections at the provincial borders, and 26.8% of branches which flow out of Henan Province, reach the water quality standard.[13]

In 2014, the central government issued a legal regulation for eco-compensation in the new Environmental Protection Law, which is one market-based policy instrument to regulate the actions of ecological stakeholders.[14] The eco-compensation system aims at protecting the economic growth of poor rural areas during environmental protection, used for ecological compensation of upstream and downstream, water pollution prevention and control, as well as rewards for provinces and municipalities with better water performances (Li & Liu, 2010).

For example, Henan province began with the eco-compensation pilot program in the Ying River since 2009. Ying River is one of the largest tributaries of the Huai River in central China.

The downstream regions paid upstream regions CNY 84,075,500 in 2009 which provided financial incentives for local governments to reduce pollutants. By and large, the water quality of Ying improved at the end of 2009.[15] However, this eco-compensation program does not work well when poor and highly polluted cities or counties are not able to bear the financial burden. Budget allocations and financial transfers from national and provincial government are often insufficient, while the lower-level government has limited power to use the funding in river protection, especially in seriously polluted branches.

Another noticeable change along with China's environmental transition recently is increasing use of stricter national environmental laws and performance evaluation system, the introduction of binding environmental targets for local leaders, the reliance on nationwide political campaigns and centralized verification program of local water quality and pollutant emission data, all these spurred a stronger enforcement at the local level.

5. Comparative Analysis of Policy Instruments Choices and Implementation

Policy implementation is particularly relevant to policy mix. The comparative analysis of the types of policy choices and implementation for the three periods shows four types of implementation styles (Table1).

5.1 Campaign-style Enforcement

From 1994 to 2000, command-and-control instruments were adopted most frequently, including goal-planning and regulation control tools. During this period, the conflict level between the central and local government is high with regard to environmental governance. Scholars argue that the conflicts between economic development and environmental protection at localities, with considerable fiscal and administrative autonomy after reform, lead to lax environmental policy implementation (Cai, 2008; Economy, 2010). Since the end of the 1970s, the central government has put economic development as the central target and devised an evaluation system award top local performer with political promotion, which means poor incentives for environmental policy implementation at the localities (Liang & Langbein, 2015;

Ran, 2013). In addition, the environmental law and regulations reflected the relative weakness of environmental interests and the much greater influence of industrial, economic and provincial power-holders. In 1994, Premier Li Peng called for intensifying efforts in an "uphill battle" to control pollution emissions in the Huai river and achieved the targets at the end of 1997. These high-profile political actions marked the beginning of the campaign-style enforcement of water policies in the Huai River Basin between 1995 and 2000.

The continued violations at the Huai River increased national attention. Pollution accidents keep recurring, effective local enforcement seems impossible and pressure from the media and public pushed the central government to adopt specific regulations and nationwide campaign-style enforcement, such as "the Zero Point Action" in 1997. In this regard, campaign-style implementation fits the political implementation scenario in Matland's (1995) model, which achieves its goal through both resource sufficiency and power adequacy. However, the campaign presented different outcomes within a short and long term. As a result, the "Zero Point Action" had gain a short-term victory because it targeted local polluting factories directly, but the rooted interest conflicts between central and local governments led to lax enforcement which showed a sign of "pollution rebound" period shortly afterwards.

5.2 Symbolic Implementation

From 2001 to 2005, the number of regulation control instruments increased dramatically, such as emission standards and performance evaluations. However, water legislations reflected the relative weakness of environmental laws, which tended to be a compromise and thus was vague and week comparing the great influence of industrial, economic and local interest groups. The performance evaluation of local government officials for environmental protection had been very weak. For example, the national plan did not clearly define the mechanisms for attaining the targets or how the leaders' performances would be evaluated. Along with the formalization process, Chinese local officials increasingly face multiple policy targets from central or higher-level government, intensified incentive and evaluation system, and competition with other bureaucrats for promotion, which led to symbolic implementation or selective implementation.

For example, according to the People's Daily (13, January 2005), local government officials developed various coping strategies in response to central inspections, such as "manufacturing" environmental records to meet policy targets or turning a blind eye to polluting enterprises.[16] Local enterprises built multiple discharge outlets connected with each other, they closed the one when governments came for inspection and used others for discharging waste water. Local government officials took economic development as the "hard targets" while environmental protection as "soft target". Besides, given their limited willingness and financial ability to enforce the water policy, symbolically, different localities show a high level of uniformity in implementing state policies. As a result, the strategy of "symbolic implementation" or "selective implementation" are unlikely to be effective and improve water quality in this river basin.

5.3 Experimental Implementation

Since 2006, the government deployed an integrated policy strategy reduce pollutant emission and improve implementation performance, such as total emission control, market-based instruments, environmental protection target responsibility system and public participation system. For many policies, the goals are agreed upon and known, but the means of reaching these goals is unknown and flexible. At the same time, local governments adjust their priorities in response to hardened environmental protection requirements and incentives coming from Beijing because of an increasingly centralized governance trend in China. In this context, a new environmental governance mechanism arises as a consequence of and in response to centralized policies, stricter inspection, more incentives from central government and increasing competition between localities. The rise of joint problem-solving and coordination mechanisms among government bodies and non-governmental stakeholders. One example in the Huai River Basin is called "Lotus model".[17]

In order to implement national policies and supervise local governments, the central government allows the existence of NGOs. One of them is Huai River Guarder, which is famous for its successful "Lotus model". After closing small polluting businesses, large corporations were even more unscrupulous in dumping waste into the Huai River. One of the biggest polluters survived is the Lotus Gourmet Powder Company in Henan province, China's largest

producer of monosodium glutamate, one kind of flavor enhancer. The company's social and political influence is so vast that environmental regulators who have tried to challenge the company have done so in vain. After the pollution issues emerged, central government officials proposed that this company was a highly polluting industry and should be shut down, to make the matter worse, the Japanese investors withdrew all investments. In this context, Chinese investors agreed to take their environmental responsibilities and coordinate with volunteers and experts from the Huai River Guarder.[18] In 2007, Lotus Gourmet Powder Company achieved energy-efficiency and national discharge standards. Sewage water emissions was reduced from 120,000 tons per day to 12,000 tons per day, and ammonium nitrogen content in the sewage water were reduced from 120mg/L to less than 5mg/L. This model falls into the category of experimental implementation, which means that the honest and comprehensive communication of uncertainties between non-state actors may improve policy outcomes.[19]

5.4 Administrative Implementation

Since 2012, Xi Jinping has recentralized decision-making and strengthened party control, which also indicates an increasing role played by the central government in environmental governance. Xi called environmental protection a battle against all pollutions and adopted various tools such as coercive supervisory mechanism, political and administrative measures. Implementing 'veto power system' for environmental protection and administrative accountability system forces local government officials to give priority to environmental issues (Kostka & Nahm, 2017). During this period, the policy goals are given and means for solving the existing problem are known. When the central government sends out a strong signal in favor of environmental protection, such as a statement from President Xi Jinping, the behaviors and incentives of local officials are likely to be affected instantly. The conflict level is low because of strong incentives and political will from the central government. Thus, policies flow from the top down and implementation is ordered in a hierarchical manner. In this regard, administrative implementation can be traced at the localities which have sufficient resources for the water program. In the case of Shandong province, the local governments committed to generating more trustworthy water quality information through increased use of online monitoring satellite and GPS data.[20] In addition, financial transfer from the central government

to local environmental protection departments is increasing. However, some counties in Henan province present political and symbolic implementation during this period because of a lack of funding, technology support and other local considerations.

6. Discussion

The environmental policy instruments used to improve river basin governance range from command-and-control instruments, market-based tools and a broad set of political and administrative tools, which are specific to the Chinese context.

From 1994 to 2000, goal-planning was adopted most frequently, such as emission standard, followed by regulation control tools, like closing polluting factories. However, in the contexts of conflicting interests between central and local government, the enforcement of these command-and-control tools was difficult because of the lack of local political will and limited financial support. At the same time, the frequent water pollution incidents had become one of the most notable environmental problems in China, which led to legitimacy pressure from the public. Thus, general and industry-specific campaign-style enforcement practices were adopted and presented a direct intervention of local administrative power (Liu et al., 2015). The use of political campaign to enhance enforcement can achieve a tremendous improvement within a short period of time considering the means to achieve nationwide policy goals are clear. However, sustainable development requires more legislation and gradual increase concern about environmental issues while hard policies only focus on closing down the production. As a result, after the campaign (from 2001 to 2005), local governments turn a blind eye to small, polluting factories that should be closed down according to law, which means the national environmental law lacks local legitimacy because environmental protection threatens local income and stability. During this period, the number of command-and-control and political instruments increased. The 10th FYP discussed a link between a local leader's performance evaluation and environmental attainment. However, the plan did not clearly define the mechanisms for attaining these goals and how the environmental outcomes connected with

officials' performance. The effect of such vague legislation is that those who have to apply the regulations can more easily selective or symbolic implement water policies.

Since 2006, the central government established the environmental quality administrative leadership accountability system defining attainment of environmental targets as a criterion for local leaders' promotion (Liao, 2016). Besides, the state council would publish an annual report to the public on progress towards achieving the environmental goals. Some new policies were implemented during 11th and 12th FYPs. For example, the pollution compensation between provinces, levy collection for pollutants, and publication of real-time water quality data became mandatory. Along with the formalization process, informal mechanisms also influence environmental policy implementation. The experiment in Lotus company, a successful corporation between local ENGO and polluting enterprise, relates to one of China's civil society problem: how to let NGO squeeze more value from the small parcels of environmental governance. Experimental implementation or local innovation become an important way for local government to cope with internal and external pressures. However, when environmental protection takes more weight in the central government's policy considerations, decision-making authority and resources are gradually centralized. Xi's ruthless crackdown on corruption and demands for unswerving loyalty to himself and party as the leadership's "core" cause few local officials are willing to risk the unwanted attention that might result from experiments going badly. Along with the formalization of the government organization, environmental protection and evaluation tend to be routinized and operate based on legal rules and formal procedures.

These findings stress the importance of context in understanding policy evolution and implementation modes (Howlett, 2004). Chinese governments have been working to improve the water quality of the Huai River Basin for over two decades. With the combination of policy tools, the overall water quality had been improved and the defined major pollutants emission were reduced during the 12th Five-Year-Plan. Instruments are chosen on the basis of the empirical situation, especially the conflict level of the concerned issues, the ambiguity of policy goals and means, and incentive mechanisms. Legitimacy is a critical aspect of policy evolution and instrument use which varies with context (Jordan, Wurzel, & Zito, 2003; A. L. Wang, 2013). Scholars argue that environmental protection was a critical strategy for avoiding a "crisis

of legitimacy" (Meng, Zeng, Shi, Qi, & Zhang, 2014; A. L. Wang, 2013). In the Chinese context, governments adopt political campaign when the water incidents become social stability-related concerns at the early stage. After that, environmental goals in national laws and policies become part of 'rule of law' system, which serve the function of legalizing priorities established by the party-state and implemented in the local performance evaluation system. Certainly, shifts in instruments choice have occurred due to the influence of governance transitions. For example, a preference for political and administrative tools associated with the current phase of recentralization. The evolution of water policies reflects China's adaptive authoritarianism to seeking out a more sustainable regime legitimacy, however, understanding the interplay within or between different types of instruments and how such interaction affects policy implementation in improving environmental governance remains an interesting question for future studies.

Notes

1. 21 semi-structured interviews were conducted with relevant local implementers and stakeholders in this river basin, including government and non-governmental bodies (see Appendix A). Questions focus on the actions and actors' power of influence on the policy implementation and policy choice.
2. Study on Environment and Development of the Huai River Basin, China Water Power Press, 2016, pp. 221.
3. Study on Environment and Development of the Huai River Basin, China Water Power Press, 2016, pp. 219-222.
4. State Council. 1995. "Provisional Regulation for Water Pollution Prevention and Control in the Huai River Basin," http://extwprlegs1.fao.org/docs/pdf/chn163129.pdf.
5. MEE. 1995. Prevention and Control Plan of Water Pollution in the Huai River Basin and 9th FYP.
6. NPC.1996. Water Pollution Prevention and Control Law.
7. Study on Environment and Development of the Huai River Basin, China Water Power Press, 2016, pp. 221.
8. Study on Environment and Development of the Huai River Basin, China Water Power Press, 2016, pp. 223.
9. Study on Environment and Development of the Huai River Basin, China Water Power Press, 2016, pp. 227.
10. NPC. 2002. "Water Law of the People's Republic of China," http://www.gov.cn/ziliao/flfg/2005-08/31/content_27875.htm.
11. Study on Environment and Development of the Huai River Basin, China Water Power Press, 2016, pp. 224.
12. Study on Environment and Development of the Huai River Basin, China Water Power Press, 2016, pp. 225.
13. Henan Province, Water Resources Bureau. 2016
14. NPC. 2014. "Environmnetal Protection Law of the People's Republic of China," http://www.npc.gov.cn/npc/xinwen/2014-04/25/content_1861279.htm
15. Henan Province. 2009. "Ecological Compensation for Water Environment in Shaying River Basin of Henan Province," http://blog.sina.com.cn/s/blog_547549650100ccpy.html.
16. People's Daily (13, January 2005) http://www.people.com.cn/GB/huanbao/1073/3116600.html
17. SEE. (18, February, 2009)http://gongyi.sina.com.cn/gyzx/2009-02-18/18176534.html
18. Interview, 30 August 2018, Shenqiu county, Huai River Guarder, Huo Daishan, NGO founder.
19. Interview, 25 August 2018, Hefei, Green Anhui, NGO program manager.
20. Interview, 22 August 2018, Jining,Water Conservancy Bureau, government official.

References

Agrawal, A. (2012). Local institutions and the governance of forest commons. *Comparative Environmental Politics: Theory, Practice, and Prospects*, 313-340.

Cai, X. (2008). Water stress, water transfer and social equity in Northern China—Implications for policy reforms. *Journal of Environmental Management, 87*(1), 14-25. doi:https://doi.org/10.1016/j.jenvman.2006.12.046

Chang, D., Ma, Z., & Wang, X. (2013). Framework of wastewater reclamation and reuse policies (WRRPs) in China: Comparative analysis across levels and areas. *Environmental Science & Policy, 33*(Supplement C), 41-52. doi:https://doi.org/10.1016/j.envsci.2013.05.006

Dahl, R. A., & Lindblom, C. E. (1953). *Politics, economics and welfare: planning and politico-economic systems, resolved into basic processes*: Harper & Brothers.

Economy, E. C. (2010). *The river runs black: the environmental challenge to China's future*: Cornell University Press.

French, J. R., Raven, B., & Cartwright, D. (1959). The bases of social power. *Classics of organization theory, 7*, 311-320.

Fu, B.-j., Zhuang, X.-l., Jiang, G.-b., Shi, J.-b., Lu, & Yi-he. (2007). Feature: environmental problems and challenges in China: ACS Publications.

Fukuyama, F. (2011). *The origins of political order: From prehuman times to the French Revolution*: Farrar, Straus and Giroux.

Hood, C. (1986). *Administrative Analysis: An introduction to rules, enforcement and organizations*: Wheatsheaf Brighton,, UK.

Howlett, M. (2004). Beyond good and evil in policy implementation: Instrument mixes, implementation styles, and second generation theories of policy instrument choice. *Policy and Society, 23*(2), 1-17.

Howlett, M., Ramesh, M., & Perl, A. (2003). *Studying public policy: Policy cycles and policy subsystems* (Vol. 3): Oxford University Press Oxford.

Jann, W., & Wegrich, K. (2007). Theories of the policy cycle. *Handbook of public policy analysis: Theory, politics and methods*, 43-62.

Jiatao, Z. (2010). The practice and inspiration of 'river chief mechanism'in Jiangsu Province [J]. *China Water Resources, 12*, 012.

Jordan, A., Wurzel, R. K., & Zito, A. R. (2003). Comparative conclusions-'new'environmental policy instruments: An evolution or a revolution in environmental policy? *Environmental politics, 12*(1), 201-224.

Kirby, E. S. (1955). China's first five-year plan. *Journal of the Royal Central Asian Society, 42*(3-4), 269-274.

Kostka, G. (2013). Environmental protection bureau leadership at the provincial level in China: examining diverging career backgrounds and appointment patterns. *Journal of Environmental Policy & Planning, 15*(1), 41-63.

Kostka, G., & Nahm, J. (2017). Central–local relations: recentralization and environmental governance in China. *The China Quarterly, 231*, 567-582.

Landry, P. F. (2008). Authoritarianism and Decentralization. *Decentralized Authoritarianism in China: The Communist Party's Control of Local Elites in the Post-Mao Era*, 1-32.

Lasswell, H. D. (1958). The Scientific Study of International Relations. *Yearbook of World Affairs, 12*, 1-28.

Li, W., & Liu, M. (2010). Several strategic thoughts on China's eco-compensation mechanism. *Resources science, 5*, 791-796.

Liang, J., & Langbein, L. (2015). Performance management, high-powered incentives, and environmental policies in China. *International Public Management Journal, 18*(3), 346-385.

Liao, Z. (2016). The evolution of wind energy policies in China (1995–2014): An analysis based on policy instruments. *Renewable and Sustainable Energy Reviews, 56*, 464-472.

Lieberthal, K. G. (1992). Introduction: the 'fragmented authoritarianism'model and its limitations. *Bureaucracy, politics, and decision making in post-Mao China*, 1-30.

Linder, S. H., & Peters, B. G. (1989). Instruments of government: Perceptions and contexts. *Journal of public policy, 9*(1), 35-58.

Liu, N. N., Lo, C. W. H., Zhan, X., & Wang, W. (2015). Campaign-Style Enforcement and Regulatory Compliance. *Public Administration Review, 75*(1), 85-95.

Lowi, T. J. (1972). Four systems of policy, politics, and choice. *Public administration review, 32*(4), 298-310.

Matland, R. E. (1995). Synthesizing the implementation literature: The ambiguity-conflict model of policy implementation. *Journal of Public Administration Research and Theory, 5*(2), 145-174.

Meng, X., Zeng, S., Shi, J. J., Qi, G., & Zhang, Z. (2014). The relationship between corporate environmental performance and environmental disclosure: An empirical study in China. *Journal of Environmental Management, 145*, 357-367.

Nickum, J. (2010). Water policy reform in China's fragmented hydraulic state: Focus on self-funded/managed irrigation and drainage districts. *Water Alternatives, 3*(3), 537.

Qian, J., & Mok, K. H. (2016). Dual decentralization and fragmented authoritarianism in governance: Crowding out among social programmes in China. *Public Administration and Development, 36*(3), 185-197.

Ran, R. (2013). Perverse incentive structure and policy implementation gap in China's local environmental politics. *Journal of Environmental Policy & Planning, 15*(1), 17-39.

Rui, M. (2008). *China's fragmented political structure and the effect on environmental policy enforcement—on the water pollution control in the tributaries in the Three Gorges Reservoir area.* (1457352 M.A.), University of Southern California, Ann Arbor.

Schreifels, J. J., Fu, Y., & Wilson, E. J. (2012). Sulfur dioxide control in China: policy evolution during the 10th and 11th Five-year Plans and lessons for the future. *Energy Policy, 48*, 779-789.

Shen, D. (2004). The 2002 Water Law: its impacts on river basin management in China. *Water Policy, 6*(4), 345-364.

Tang, J., Shi, T., Wu, X., Cao, H., Li, X., Hua, R., . . . Yue, Y. (2015). The occurrence and distribution of antibiotics in Lake Chaohu, China: seasonal variation, potential source and risk assessment. *Chemosphere, 122*, 154-161.

Tang, L. (2017). *China's Authoritarian Path to Development: Is Democratization Possible?* : Routledge.

Wang, A. L. (2013). The Search for Sustainable Legitimacy: Environmental Law and Bureaucracy in China'(2013). *Harvard Environmental Law Review, 37*, 365.

Wang, J. (2012). *Policies for Controlling Groundwater Pollution from Concentrated Animal Feeding Operations.* (3518700 Ph.D.), University of California, Riverside, Ann Arbor.

Table 1. The framework of policy evolution and implementation mode in the Huai River Basin

Stage	**Period**	**Policy tools**	**Conflict**	**Goal Ambiguity**	**Means Ambiguity**	**Incentive**	**Implementation mode**
Work to Overcome Obstacles	1994-2000	Goal-planning; Emission standards; Closing polluting plants	High	Low	Low	Low	Campaign-style enforcement
Pollution Rebound	2001-2005	Goal-planning; Emission standards; Performance standards	High	High	High	Low	Symbolic implementation
Integrated Governance	2006-2018	command-and-control; market-based; political and administrative tools	High	Low	High	High	Experimental implementation
			Low	Low	Low	High	Administrative implementation